

7. (amended) Plug connector according to Claim 6, characterized by the fact that a stop element is a circlip which can be fixed to the circumference of the plug housing.

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8. (amended) Plug connector according to Claim 6, characterized by the fact that a pressure spring rests against a first stop of the collar and against a second stop of a circlip, so that in the case of an incomplete insertion of the bayonet ring, the latter is pushed back through a front face of the collar.

9. (amended) Plug connector according to Claim 1, characterized by the fact that after the complete insertion of the bayonet ring, a collar rests on spring tongues.

REMARKS

This amendment is responsive to the Office Action dated January 31, 2001. Claims 1-9 remain in the application. Claims 1-9 have been amended to clarify applicants claimed invention.

In accordance with 37 C.F.R. §1.121 (as amended on 11/7/2000) the rewritten claim(s) above are shown on separate page(s) marked up to show all the changes relative to the previous version of that claim.

Applicants hereby petition for a one month extension of time. A check for the petition fee is enclosed. Please charge deposit account 16-1350 for any fee deficiency.

In regard to paragraph 1 of the Office Action, the title has been replaced to overcome Examiners objection.

In regard to paragraphs 2 and 3 of the Office Action, sheets 1, 2 and 4 of the drawings have been amended to overcome Examiners objection. Applicant respectfully directs the examiner to the drawing amendment with red - lined drawings attached.

In regard to paragraph 4 of the Office Action, the claims have been amended to overcome examiner's objections with the exception of the objection stated in 4e. Applicant respectfully directs Examiner to page 5, line 31 and page 6, line 20 of the specification for support relating to the term "circlip" which is a term used in the mechanical arts. The amendments to the claims are only for formality purposes and are not done to narrow the claims or for patentability purposes.

Claims 1-9 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-9 has been amended to overcome examiner's rejection.

Claims 1, 6 and 7 were rejected under 35 U.S.C. 102(b) as being anticipated by Shuey et al. (4,477,022).

Claim 1 recites that the bayonet ring (2) can be pushed on the plug housing (23) until at least one locking device of the bayonet ring (2) interlocks with the plug housing (23). For unlocking the connector, the bayonet ring (2) can be rotated about the counterplug housing (3).

Shuey et al. (4,477,022) discloses a connector having a plug (12) and a receptacle (14). The plug 12 has a housing member (16) and the receptacle (14) has a housing (64). A metal coupling ring (82) is rotatable relative to housing (64). Metal coupling ring (82) has threads (84) for engagement with threads (24) of housing (16) to couple the connector. The metal threads (84) on the ring (82) and the mating metal threads (24) on housing (16) prevent the ring from being pushed on the housing. It is impossible to push the metal ring over the threads as the ring must be rotated, not pushed.

No where in Shuey et al. is there a disclosure or suggestion of locking the connector with a bayonet ring that can be pushed on the plug housing until at least one locking device of the bayonet ring interlocks with the plug housing as claimed in the present invention. Instead, in Shuey et al. discloses a coupling ring (82) that has threads (84) for engagement with threads (24) of housing (16). The threaded ring in Shuey et al. can not be pushed on a housing until at least one locking device of the ring interlocks with the housing. The threaded ring in Shuey et al. must be rotated in order for the threads to engage or lock in any manner. Merely pushing the ring of Shuey et al. against a housing interlocks nothing. Shuey et al. does not disclose or

PUSH & ROTATED

CLAIM WAS NOT TO PUSH & NO ROTATION

suggest a bayonet ring that can be pushed on the plug housing until at least one locking device of the bayonet ring interlocks with the plug housing. The features of claim 1 are neither disclosed nor suggested by Shuey et al. (4,477,022). Accordingly, claim 1 is patentable over Shuey et al. (4,477,022).

Amended
Claim 6 is directed to the connector of claim 1 having a collar (27) arranged about the plug housing (23). The collar (27) in claim 6 can be pushed forwards or backwards in the direction of plug insertion and is arranged about the plug housing (23).

Amended, C4
Shuey et al. discloses a stop surface (54) of contact carrying insert (38). Contact carrying insert (38) is stationarily housed inside housing (16). Respectfully, Examiner has mischaracterized Shuey et al. in indicating that Shuey et al. shows a collar (54) which can be pushed forwards or backwards in the direction of plug insertion and is arranged about the plug housing (16). In Shuey et al., contact carrying insert (38) and therefor stop surface can not be pushed forwards or backwards in the direction of plug insertion as contact carrying insert (38) is stationarily housed inside housing (16). In Shuey et al., contact carrying insert (38) is not arranged about the plug housing (16) as it is inside housing (16). Claim 6 is dependent on claim 1 and therefor incorporates all the features of claim 1. Claim 7 is dependent on claim 6 and therefor incorporates all the features of claim 6. The features of claims 6 and 7 are neither disclosed nor suggested by Shuey et al. (4,477,022). Accordingly, for the reasons set forth herein and for the

reasons set forth regarding claim 1, claims 6 and 7 are patentable over Shuey et al. (4,477,022).

Claims 2 and 9 were rejected under 35 U.S.C. 103(a) as being unpatentable over Shuey et al. (4,477,022), in view of Loveland (3,173,473).

Loveland is not analogous prior art as it is not in the field of applicant's endeavor or reasonably pertinent to the particular problem with which the inventor was concerned as required by MPEP 2141.01(a). Loveland is in a different field of endeavor because it involves clips for retaining a thermocouple in a pilot burner bracket, whereas the claimed invention involves electrical connectors. Additionally, Hall is not reasonably pertinent to the particular problem with which the inventor was concerned as Hall is directed to mounting thermocouples as opposed to the claimed invention which is directed to electrical connectors and connections. Additionally, the structure and function of Loveland is different than the claimed invention as Hall discloses a thermocouple mounting clip which is insertable and removable whereas the claimed invention discloses an interlocking locking device. Loveland is not analogous prior art as required by MPEP 2141.01(a). Accordingly, claims 2 and 9 are patentable over Shuey et al. (4,477,022) in view of Loveland (3,173,473).

Even if, for argument sake, Loveland were considered analogous art, (though the applicant maintains it is not) Loveland neither discloses or suggests the features in claim 2. Claim 2 is directed to the connector of claim 1 where the locking device

has at least one spring tongue (5,6 and 7) molded on the bayonet ring (2) and running in the direction of the plug insertion with an inward-pointing peg (8). The circumference (53) of the plug housing (23) has at least one sliding channel (34) which is able to receive the peg (8).

Loveland discloses a clip (11) having thermocouple engaging fingers (23) and thread engaging fingers (22). Nowhere in Loveland is there a disclosure or suggestion of a locking device that has at least one spring tongue (5, 6, 7) molded on a bayonet ring (2) and running in the direction of plug insertion with an inward-pointing peg (8). Instead, Loveland discloses fingers which frictionally engage a thermocouple or threads as opposed to a locking device as claimed in the present invention. Instead, Loveland discloses formed metal fingers as opposed to at least one spring tongue molded on a bayonet ring as claimed in the present invention. Instead, Loveland discloses a flange (21) as opposed to a bayonet ring as claimed in the present invention. Instead, Loveland discloses outwardly formed ribs (22a-22f) (see col. 2, l. 31-32) and outwardly bent end portions (23a) (see col. 2, l. 25-26) instead of an inward-pointing peg as claimed in the present invention. Claim 2 is dependent on claim 1 and therefor incorporates all the features of claim 1. Shuey et al. does not disclose or suggest the features of claim 2, specifically that where the locking device has at least one spring tongue (5,6 and 7) molded on the bayonet ring (2) and running in the direction of the plug insertion with an inward-pointing peg (8) and where the circumference (53) of the plug housing (23) has at least one sliding channel (34) which is able to receive the peg (8). The examiner appears to agree on this

point. The features of claim 2 are neither disclosed nor suggested nor made obvious by Shuey et al. (4,477,022) in view of Loveland (3,173,473). Accordingly, for the reasons set forth herein and for the reasons set forth regarding claim 1, claim 2 is patentable over Shuey et al. (4,477,022) in view of Loveland (3,173,473).

Even if, for argument sake, Loveland were considered analogous art, (though the applicant maintains it is not) Loveland neither discloses or suggests the features in claim 9. Claim 9 is directed to the connector of claim 1 where after the complete insertion of the bayonet ring (2), a collar (27) rests on spring tongues (5,6 and 7).

Loveland discloses a clip (11) having thermocouple engaging fingers (23) and thread engaging fingers (22). Nowhere in Loveland is there a disclosure or suggestion of after the complete insertion of the bayonet ring (2), a collar (27) rests on spring tongues (5,6 and 7). Instead, Loveland discloses a flange (21) as opposed to a bayonet ring as claimed in the present invention. Claim 9 is dependent on claim 1 and therefore incorporates all the features of claim 1. The features of claim 9 are neither disclosed nor suggested nor made obvious by Shuey et al. (4,477,022) in view of Loveland (3,173,473). Accordingly, for the reasons set forth herein and for the reasons set forth regarding claim 1, claim 9 is patentable over Shuey et al. (4,477,022) in view of Loveland (3,173,473).

Claims 4 and 5 were rejected under 35 U.S.C. 103(a) as being unpatentable over Shuey et al. (4,477,022), in view of Clark et

al. (5,913,691). Claims 4 and 5 depend from claim 1 and therefor include all the limitations of claim 1. The features of claims 4 and 5 are neither disclosed nor suggested nor made obvious by Shuey et al. (4,477,022) in view of Clark et al. (5,913,691). Accordingly, for the reasons regarding claim 1, claims 4 and 5 are patentable over Shuey et al. (4,477,022) in view of Clark et al. (5,913,691).

Claim 8 was rejected under 35 U.S.C. 103(a) as being unpatentable over Shuey et al. (4,477,022), in view of Knapp (4,279,458).

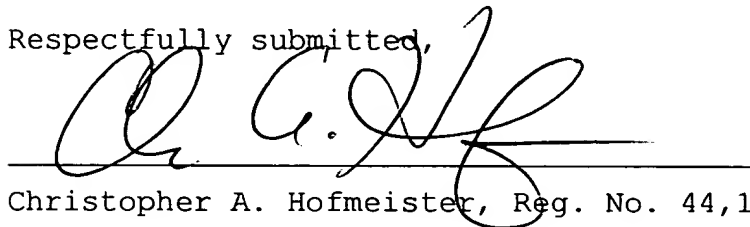
Claim 8 is directed to the connector of claim 6 where a pressure spring (66) rests against a first stop (63) of the collar (27) and against a second stop (26) of a circlip (25), so that in the case of an incomplete insertion of the bayonet ring (2), the latter is pushed back through a front face (70) of the collar (27). Knapp discloses an operating sleeve (28) and actuate threaded coupling segments (22). Rotation of operating sleeve (28) rotates threaded coupling segments (22) thus mating receptacle (15) with shell (14) (see col. 3, l. 53-59). Nowhere in Knapp is there a disclosure or suggestion of in the case of an incomplete insertion of a bayonet ring, the latter is pushed back through a front face of the collar as claimed in the present invention. Instead, Knapp discloses threaded coupling segments (22) which is not a bayonet ring. Instead, Knapp fails to disclose a bayonet ring pushed back through a front face of the collar as claimed in the present invention. Claim 8 depends from claim 6 which depends from claim 1 and therefor includes all the limitations of claims 6 and 1. The features of claim 8

are neither disclosed nor suggested nor made obvious by Shuey et al. (4,477,022) in view of Knapp (4,279,458). Accordingly, for the reasons set forth herein and for the reasons regarding claims 6 and 1, claim 8 is patentable over Shuey et al. (4,477,022) in view of Knapp (4,279,458).

Claim 3 was indicated by the Examiner as being objected to as being dependent upon a rejected base claim but allowable if rewritten in independent form including all the limitations of the base claim and any intervening claims. Claim 3 has been rewritten in independent form including all the limitations of the base claim and any intervening claims. Accordingly, claim 3 is patentable.

For all the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' Attorney at the telephone number indicated below.

Respectfully submitted,


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Date

CERTIFICATE OF MAILING

I hereby certify that this amendment in response to the PTO Office Action dated January 31, 2001 is being deposited with the United States Postal Service today as first class mail addressed to Assistant Commissioner for Patents, Washington, D.C. 20231.

5/29/01

Date

Caum Marsh

Name of Person Making Deposit

Application Number: 09/574,277

MARKED UP CLAIMS

1. (amended) Electrical plug connectors with
- a cylindrical plug [(20)],
- a counterplug [(1)] which is complementary to the plug [(20)],
- a bayonet ring [(2)] which is rotatable about [the] a counterplug housing [- (3)] of the counterplug [(1)] for locking the plug [(20)] into the counterplug,
[characterised] characterized by the fact that the bayonet ring [(2)] for the locking of the plug connector in the direction of plug insertion can be pushed on [the] a housing [(23)] of the plug [(20)] until at least one locking device of the bayonet ring [(2)] interlocks with the plug housing [(23)] and that the bayonet ring [(2)] for the unlocking of the plug connector can be rotated about the counterplug housing [(3)].

2. (amended) Plug connector according to Claim 1, [characterised] characterized by the fact that the locking device has at least one spring tongue [(5,6 and 7) moulded] molded on the bayonet ring [(2)] and running in the direction of the plug insertion with an inward-pointing peg [(8)] and that [the] a circumference [(53)] of the plug housing [(23)] has at least one sliding channel [(34)] which is able to receive the peg [(8)].

3. (amended) Electrical plug connector comprising:

a cylindrical plug;

a counterplug which is complementary to the plug; and

a bayonet ring which is rotatable about a counterplug housing of the counterplug for locking the plug into the counterplug;

characterized by the fact that the bayonet ring for the locking of the plug connector in the direction of plug insertion can be pushed on a plug housing of the plug until at least one locking device of the bayonet ring interlocks with the plug housing and that the bayonet ring for the unlocking of the plug connector can be rotated about the counterplug housing, further characterized by the fact that the locking device has at least one spring tongue molded on the bayonet ring and running in the direction of the plug insertion with an inward-pointing peg and that a circumference of the plug housing has at least one sliding channel which is able to receive the peg, further characterized [Plug connector according to Claim 2, characterised] by the fact that [the] a starting area [(35)] of the sliding channel [(34)] runs substantively at an angle to the direction of plug insertion and that [the] a terminal area [(36)] of the sliding channel [(34)] runs substantively parallel to the direction of plug insertion, where the terminal area [(36)] has at least one locking lug [(41)] which can be negotiated by the peg [(8)], where both

areas [(35,36)] run into [the] a front face [(37)] of the plug housing [(23)].

4. (amended) Plug connector according to [Claims] Claim 1, [characterised] characterized by the fact that the bayonet ring [(2)] has at least one outward-pointing pin [(4)] and that the plug housing [(23)] has at least one lever arm [(47, 48)] which can be rotated vertically to the direction of plug insertion to grip the pin [(4)].

5. (amended) Plug connector according to Claim 4 [characterised] characterized by the fact that the bayonet ring [(2)] has two diametrically opposite pins [(4)] and that the plug housing [(23)] has two diametrically opposite L-shaped lever arms [(47, 48)] which are linked together by a substantively semicylindrical C-strap [(24)].

6. (amended) Plug connector according to Claim 1, [characterised] characterized by the fact that a collar [(27)] which can be pushed forwards or backwards relative to the housing in the direction of plug insertion is arranged about the plug housing [(23)].

7. (amended) Plug connector according to Claim 6, [characterised] characterized by the fact that [the] a stop element is a circlip [(25)] which can be fixed to the circumference of the plug housing [(23)].

8. (amended) Plug connector according to Claim 6, [characterised] characterized by the fact that a pressure

spring [(66)] rests against a first stop [(63)] of the collar [(27)] and against a second stop [(26)] of [the] a circlip [(25)], so that in the case of an incomplete insertion of the bayonet ring [(2)], the latter is pushed back through [the] a front face [(70)] of the collar [(27)].

9. (amended) Plug connector according to Claim 1, [characterised] characterized by the fact that after the complete insertion of the bayonet ring [(2)], [the] a collar [(27)] rests on [the] spring tongues [(5,6 and 7)].